AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application:

1. (Original) A method of assigning frame types for coding of pictures in a video sequence, comprising:

determining movement between image data of a reference picture and each of a plurality of pictures in temporal order,

comparing the movement of a first picture in the plurality, temporally closest to the reference picture, to movement of other pictures therein,

if the plurality of pictures exhibits consistent motion speed, assigning the pictures therein as B pictures.

2. (Original) The method of claim 1, further comprising assigning a picture in the sequence that does not exhibit consistent motion speed with the first picture as a P picture.

3. (Currently Amended) The method of claim 1, further comprising:

determining whether a scene change occurs in the plurality of pictures, and, if so:

coding a first picture temporally after the scene change as a P picture, and

coding all pictures in the plurality that occur from the first picture to a picture immediately prior to the scene change as a B picture as long as they exhibit consistent motion speed.

4. (Currently Amended) The method of claim 3, further comprising coding the picture before the scene ~~cut~~ change as a P picture at full quality or low quality.

5. (Original) The method of claim 1, further comprising coding a picture as a P picture when the picture, if coded as a B picture, would cause a number of consecutive B pictures to be larger than a predetermined maximum.

6. (Original) The method of claim 1, further comprising coding select pictures as I pictures pursuant to a random access policy.

7. (Original) The method of claim 6, further comprising coding a picture temporally adjacent to and before the I picture as a P picture.

8. (Currently Amended) The method of claim 7, further comprising coding a picture temporally adjacent to and before the I picture as a P picture using ~~full quality of~~ low quality.

9. (Original) The method of claim 1, wherein the determining comprises computing motion vectors between pixelblocks of the plurality of pictures and of the reference picture and the comparing comprises comparing motion vectors of the respective pictures.

10. (Currently Amended) A video coding method, comprising, from a sequence of video data:

determining a motion speed between a first picture and a reference picture;

for each picture following the first picture, until a termination condition is met:

determining a motion speed for the respective picture,

comparing the motion speed of [[a]] <u>the</u> respective picture with the motion speed of the first picture, and

coding the respective picture as a B picture if the motion speeds are consistent with each other; and

when the termination is met, coding a picture as a P picture.

11. (Original) The video coding method of claim 10, wherein the termination condition is met when motion speed of a picture is not consistent with the motion speed of the first picture.

12. (Original) The video coding method of claim 10, wherein the termination condition is met when a scene change is detected.

13. (Original) The video coding method of claim 12, further comprising coding a frame immediately prior to the scene change in display order as a P frame and coding a frame immediately after the scene change in display order as an I frame.

14. (Original) The video coding method of claim 12, further comprising coding frames immediately prior to the scene change in display order and immediately after the scene change P frames.

15. (Original) The video coding method of claim 12, further comprising coding frames immediately adjacent to the scene change in display order as B frames within a group of frames.

16. (Original) The video coding method of claim 12, further comprising detecting a scene change by comparing a correlation coefficient C to a predetermined threshold, the correlation coefficient given by:

$$C(n)=\frac{\sum_{i=1}^{M}\sum_{j=1}^{N}x_n(i,j)x_{n+1}(i,j)}{\sum_{i=1}^{M}\sum_{j=1}^{N}x_n^2(i,j)\sum_{i=1}^{M}\sum_{j=1}^{N}x_{n+1}^2(i,j)}$$, where

n and n+1 identify pictures between which the scene change may be detected, $x_n(i,j)$ and $x_{n+1}(i,j)$ respectively represent pixel values of pictures n and n+1 at pixel locations (i,j) and M and N represent width and height (respectively) of pictures n and n+1.

17. (Original) The video coding method of claim 10,

wherein the termination condition is met when a random access policy dictates that a picture be coded as an I picture, and

a picture temporally adjacent to and before the I picture is coded as a P picture.

18. (Original) Apparatus, comprising:

a memory to store pictures of a video sequence,

a video coder coupled to the memory, to code each stored picture as one of an I picture, a P picture and a B picture,

a motion vector generator coupled to the memory to generate motion vectors for a plurality of stored pictures, the motion vectors measuring motion between a respective picture and a stored reference picture,

a colinearity detector having an input coupled to the output of the motion vector generator, and

a picture type decision unit to assign pictures having generally consistent motion speeds for B picture coding and to assign a picture that does not exhibit consistent motion speed for coding as a P picture.

19. (Original) The apparatus of claim 18, wherein the picture type decision unit further controls the video coder to cause it to code the B and P pictures.

20. (Original) The apparatus of claim 18, wherein the video coder codes B and P frames using motion vectors generated by the motion vector generator.

21. (Original) The apparatus of claim 18, further comprising a scene change detector coupled to the memory and to the picture type decision unit, to identify stored frames that follow a scene change.

22. (Original) The apparatus of claim 21, wherein the picture type decision unit assigns a frame immediately prior to the scene change in display order for coding as a P frame and assigns a frame immediately after the scene change in display order as an I frame.

23. (Original) The apparatus of claim 21, wherein the picture type decision unit assigns a frames immediately prior to the scene change in display order and immediately after the scene change for coding as P frames.

24. (Original) The apparatus of claim 21, wherein the picture type decision unit assigns frames immediately adjacent to the scene change in display order as B frames within a group of frames.

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Original) A video coding assignment method, comprising, for each of a plurality of pictures following a reference picture:

adding a first picture that follows the reference picture in display order to a group of frames,

determining a motion speed of the first picture with respect to the reference picture,

iteratively, for pictures subsequent to the first picture in display order:

adding the subsequent picture to the group of frames,

determining a motion speed of the subsequent picture with respect to the reference picture,

if the motion speed of the subsequent picture is consistent with the motion speed of the first picture, performing a next iteration, and

if not, coding the last picture of the group of frames as a P picture and coding all other pictures in the group of frames as a B picture.

30. (Original) The video coding assignment method of claim 29, wherein the motion speed determinations are based on a pixelblock-by-pixelblock comparison of motion vectors between the respective pictures.

31. (Original) The video coding assignment method of claim 30, wherein the motion speed determinations are:

$$S(n,b) = \frac{d_x(n,b) + d_y(n,b)}{n}, \text{ where}$$

S(n,b) represents the motion speed of a picture, d_x and d_y represent displacements of the respective pixelblock b of picture and n represents the temporal distance of the picture from the reference picture.

32. (Original) The video coding assignment method of claim 29, wherein colinearity is based on:

$$E(n) = \sum_{1}^{N_{blocks}} \frac{|e(n,b)|}{N_{blocks}}, \text{ wherein}$$

e(n,b) represents a difference of motion vector displacements of the respective subsequent picture with respect to the first picture, each scaled according to its temporal distance from the reference picture, and N_{blocks} represents the number of pixelblocks in each picture.